

DR. HOLUB'S AFRICAN TRAVELS¹

II.

DR. HOLUB'S third and longest expedition was commenced in March, 1875, and with an account of it the second volume opens. He now proposed to explore Southern Central Africa, and having acquired a great deal of experience during his two previous journeys, was justly in great hopes of success. The route this time selected was first to the Molapo River. As usual great herds of game were from time to time met with, wherever the bush cover was good; then on to his old quarters at Shoshong, where a few days for rest were spent; from Shoshong he journeyed to the great salt-lakes. Elands were now met with, and furnished many a hearty meal. The first salt lake was met on the morning of April the 18th. Away to the west it extended as far as the eye could see, and it took two hours to travel the length of its eastern coast. There was a uniform depth of barely two feet, and it presented a light grey surface edged with stiff arrow-grass and surrounded by dense bush-forest, whilst around about it, in the very thickest of the grass, were considerable numbers of miniature salt-pans; indeed every depression in the soil contained salt. The evaporation appeared to be most rapid. This salt-lake was called Tsitane, the same name being also given to the adjoining river. Here the first Baobab tree was seen; it was a fine specimen, some twenty-five feet in height and nearly fifty-two feet in circumference. Another larger and deeper lake was called by the natives Karri-karri. Here baobabs abounded. The third of the great salt-lakes, called Soa, is the largest; it extends westward beyond Lake N'gami; it is also very shallow, being only four feet in depth. Travelling on to the banks of the Nata and to Tamasetze with the object of getting to the Zambesi before the middle of the month, he encountered one of Mr. Anderson's servants called Saul. He was out on an ostrich hunt, and though an uncommonly bad shot, managed in the following manner to get more than his fair share of birds and eggs:—"I always," he told Dr. Holub, "take a man with me, and we look about till we discover a nest, and then we dig a hole pretty close to it in which we hide. The birds come to sit, and it doesn't want a very good shot to knock over an ostrich when it is just at hand. Well, having made sure of one bird, we stick up its skin on a pole near the nest, and except we are seen, and so scare the birds away, a second ostrich is soon decoyed, and I get another chance." Such "hunting" as this is very likely to destroy the flocks of ostriches in the country around the Klamaklenyana Springs. The country of the Madenassanas was now entered. These people would seem to be serfs to the Bamangwatos. They are a fierce race, tall, and strongly built, the men generally with repulsive countenances, though occasionally some of the women were even nice looking. Their skin is almost black, and their stiff woolly hair hangs down for more than an inch over their temples, while it is either quite short or is kept quite short over the rest of the skull. Many elephant-hunting parties were met with. One trader had in his two waggons not less than 7000 lbs. of ivory, procured mostly in the district between the Victoria Falls and the mouth of the Chobe. A very short *détour* off the beaten waggon-track revealed herds of buffaloes, striped gnus, Zulu hartebeests, and zebras, or showed evident tracks of these and lions. Great trees with trunks of sixty feet in height were also met with, and a great many orchids with red blossoms. What a pity that Dr. Holub did not bring home some of these! Passing over an account of a rather exciting lion-hunt, in which both lion and lioness got decidedly the better of it, the Jamasetze wood was left on July 20.

¹ "Seven Years in South Africa. Travels, Researches, and Hunting Adventures between the Diamond Fields and the Zambesi." By Dr. Emil Holub (translated by Ellen E. Frewer). With about 200 original illustrations and a map. In two volumes. (London: Sampson Low, Marston, Searle, and Rivington, 1881.) Continued from p. 38.

The author was much struck by the peculiar way in which some of the leguminous trees shed their seeds, the heat of the sun causing the pods to burst with a loud explosion and to cast the seeds to a considerable distance all about. The air near this wood was full of myriads of tiny bees that crept into one's clothes, hair, and ears, making even one's nose tingle with great discomfort. About August the 10th the watershed of the Zambesi district was reached, and, gazing down into the valleys of the Chobe and the Zambesi, the author saw the realisation of some of the dreams of his youth. At Impalera, the Lower Chobe and the Zambesi rivers were calculated to have a depth of between thirty and forty feet, but the reaches and the rapids make all navigation impracticable.

Having obtained permission from the king, the Marutze kingdom was visited. Hippopotami and crocodiles were found abundant in the rivers, but all such creatures had to be for the moment overlooked because King Sepopo was waiting to receive the white man. At the banquet fish of many sorts seems to have been the principal food;

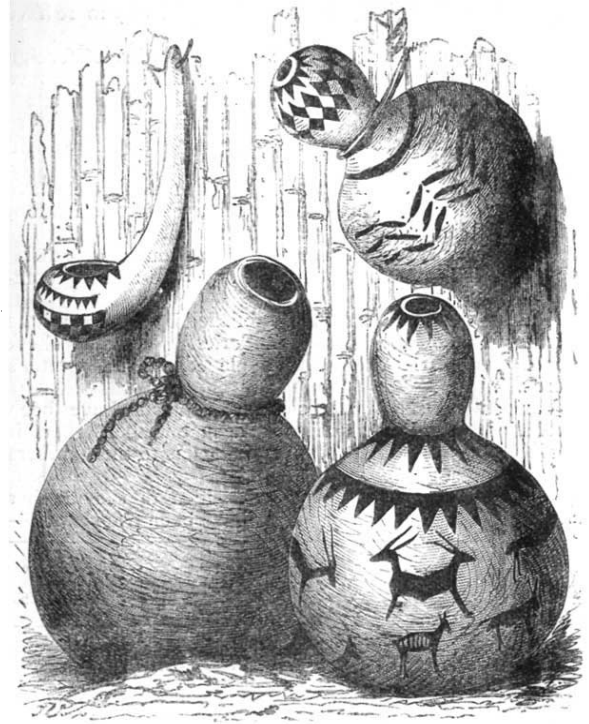


FIG. 4.—Ladle and Calabashes.

but at a supper also given, boiled eland flesh was served with a sauce made of meal, and the drink was impote (honey beer). The king demanded no present, though, such being usual, Holub presented him with a Snider breech-loader and 200 cartridges. A good deal of interesting details are given about the kingdom of Marutze, which now extends along both sides of the Zambesi, from Sekhose, to about 150 miles south of the confluence of the Kabompo and the Liba. It is a most productive portion of Africa, as well adapted for agriculture as for cattle breeding, abounds in game, and seems prolific in vegetable products, of which indiarubber is not the least important.

Not at once getting the king's permission to pursue his journey to the source of the Zambesi, Dr. Holub returns to Panda Ma Tenka, and then accompanied his friends Westbeech and Francis on a visit to the Victoria Falls, which were about fifty miles off, which are declared to be, so far as the author's experience goes, the most imposing

phenomena in the world. Staying there three days, after the amusement of a lion hunt and several adventures, they returned on September 24 to Panda Ma Tenka. With somewhat failing health our author once again turned his face to the sources of the Zambesi; but when he got to Sesheke the king told him he had been too long in coming, that it was too late to go now, and he had not kept the guides waiting for him. The king declared it would take him over four months to reach the Zambesi sources in the kingdom of the Iwan-yoe. An elephant hunt on a grand scale took place about this time, but ended in a panic, during which the whole herd of elephants escaped; but a lion hunt was more successful. Dr. Holub says he heard that one of the days during another great elephant hunt a herd of over a hundred elephants had been seen, but although at least 10,000 bullets had been fired off, only four elephants had been killed. At last leave was given to the author to accompany some of the queens who had come from the Barotse country, and on December 1 he was off. Three royal canoes were placed at his disposal, but he had to ask for a fourth, and even then his servants had to proceed on foot along the banks. The Barotse rapids were safely ascended, but at the rapids known as Mutshila Aumsinga one of the canoes, that which carried all his provisions, gunpowder, medicines, and natural history collections, was capsized, and this ended all his schemes of penetrating far into the country; and thus the preparations of seven previous years proved fruitless. The severe wetting and the extreme disappointment, brought on a dangerous attack of fever, and, growing worse and worse, there was finally no alternative but to return. After a long delay at Sesheke in hopes of recovery he was compelled, after some weeks, to revisit Panda Ma Tenka. An interesting account is given of the manners and customs of the Marutze tribes. They seem to believe in a Supreme Being in good and evil spirits, in the continued existence after death; they are fair agriculturists and good cattle breeders, having a fertile soil, a genial climate, and abundance of water; though the tsetse fly is met with, game abounds; Kaffir corn, maize, beans, cotton, and tobacco are cultivated; salt is expensive; beer from corn is usually drunk at meals; they have also a cider-like drink and the honey beer. The people are

cleanly in their persons and keep their food material in well-washed wooden or earthenware bowls or in suitable baskets or calabashes. Some of these are very tastefully decorated, and in the accompanying figures (Fig. 4) one will be seen with animal designs. The medical knowledge of the Marutze would appear to be in advance of many of the

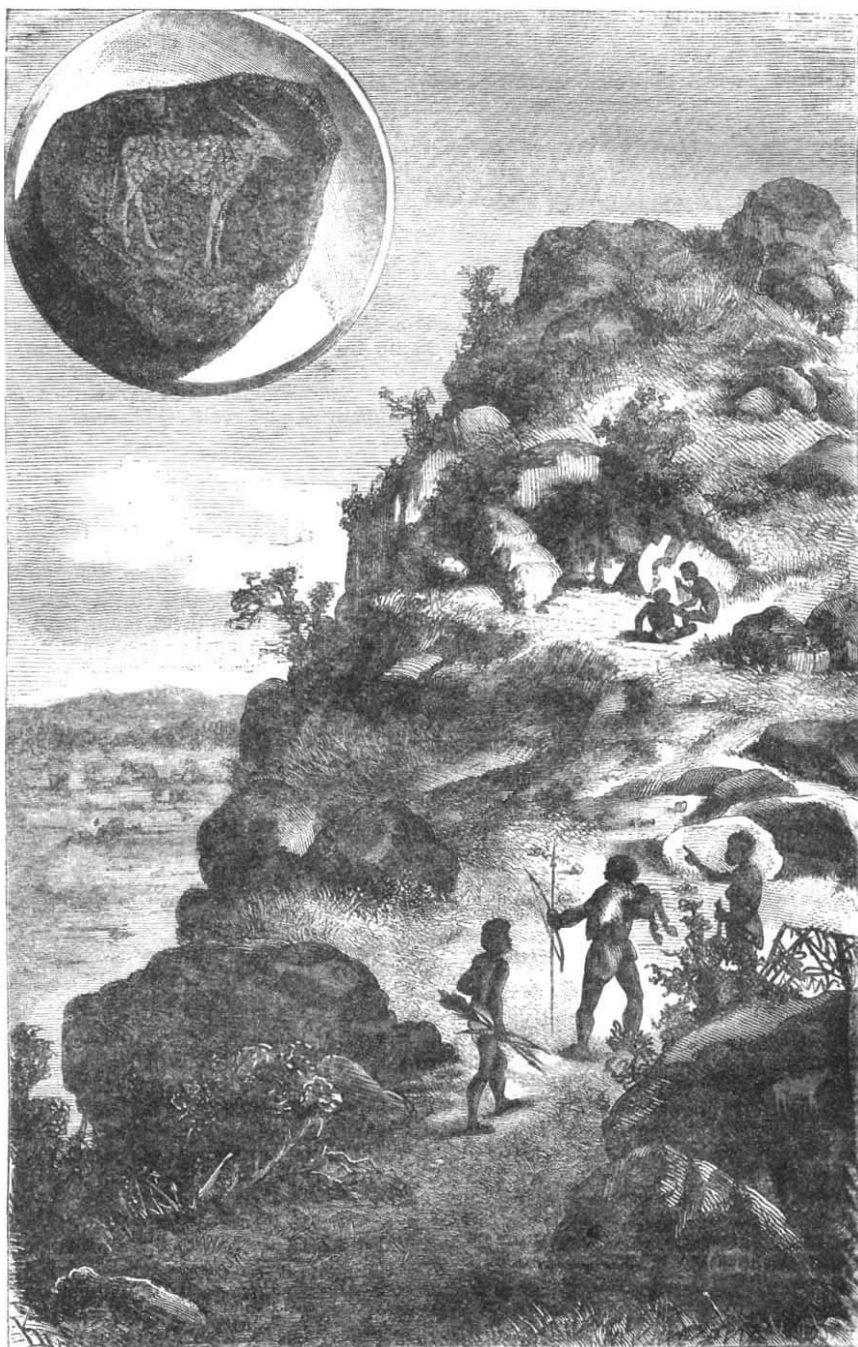


FIG. 5.—Rock caves and inscriptions of Bushmen.

South African tribes; they know the properties of a number of medicinal or poisonous plants; the treatment of fever, coughs, and wounds. Bleeding was a common operation among them, and was employed in cases of neuralgia or to reduce inflammation.

After many troubles and trials Panda Ma Tenka was

left, and the return journey was made by the way of the Makalaka and West Matabele countries, and a hearty welcome was given to the traveller on his arriving at Shoshong by the Mackenzies. While here the news arrived that war had broken out in the Transvaal between the Boers and Sekokuni. The journey to the Diamond Fields was made by Limpopo, and shortly Kimberley was for the fourth time reached. Settling at Bullfontein, the doctor with indefatigable energy soon got into large practice, and during two years, surrounded by the various animals and birds he had collected in this journey, his establishment was quite a menagerie. One holiday he paid a visit to the Orange Free State. When he viewed the Rocky Caves used by the Bushmen, he was particularly

attracted by the remarkable carvings on the rocks done by the Bushmen to adorn their primitive abodes. A sketch of some of these is represented in the adjoining woodcut (Fig. 5). The rock is chiefly a sandstone, and the drawings are frequently executed in coloured ochres.

After a considerable period spent at Bullfontein, at Grahamstown, at Port Elizabeth, and at Cape Town, he embarked on board the *Germania* for Europe in August, 1879, bringing with him large ethnological and natural history collections. While the author's travels have added something to our previous knowledge of the geography of the portions of Africa he traversed, his account of them is really pleasant reading, and will be found of special interest to the naturalist and sportsman.

ELECTRIC LIGHTING¹

III.

DECIDEDLY the most successful application of the electric light in London is at the Cannon Street station of the South Eastern Railway. The Charing Cross station of that Company has been lit up by the Brush system, and the Bricklayers' Arms goods-yards and sheds by Mr. Crompton's system, so that the South Eastern Railway officials have an admirable competitive trial proceeding within easy reach of inspection. The Cannon Street station is lit up by the British Electric Light Company with Gramme machines and Brockie lamps.

The engine—one of Marshall's semi-portable type—is of 14 horse-power nominal, and has a double cylinder on a locomotive boiler. The power is transferred by counter-shafting to the dynamo-machines by a system specially designed for the purpose, which is shown in the following sketch (Fig. 2). Large heavy fly-wheel pulleys give a second motion to the fly-wheel, which secures great

steadiness—an essential feature of electric lighting. The engine is controlled by Hartnell's automatic governor, which regulates the expansion-gear of the engine and secures great uniformity of action.

The dynamo-machines are of a new class of Gramme, of high electromotive force, and they generate currents powerful enough to work five lamps. The current produced is of 26 vebbers strength, and works a circuit of about 8 ohms resistance, thus giving an electromotive force of 208 volts. There are two machines at work, working ten lamps—eight being inside the station and two outside. The dynamos are fed by smaller Grammes, as shown in Fig. 2.

The lamps are Brockie's, the mechanism of which is extremely simple, consisting only of one magnet with a clutch, which, by means of a branch circuit, periodically interrupted by the commutator, readjusts the arc by letting the clutch fall, which releases the carbons and brings them momentarily together, and then picks them up again very smartly, so as to separate them the required distance. This gives the lamp a blinking habit,

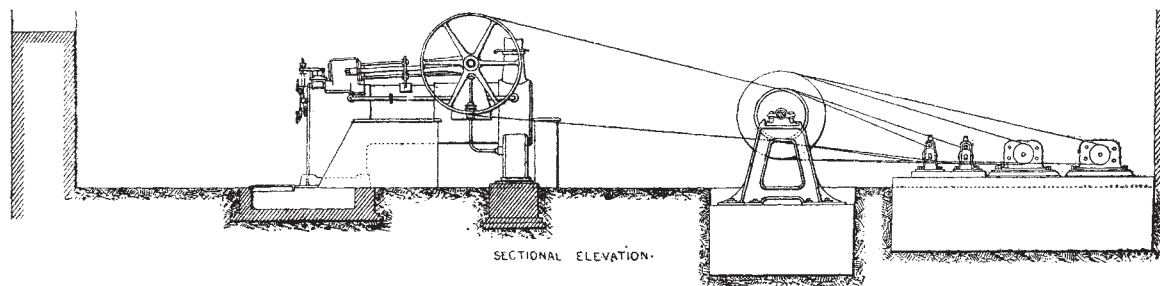


FIG. 2.

which at first is peculiar, but which one soon gets accustomed to and ignores. The diagram (Fig. 3) clearly illustrates how this is done. The magnets are fixed on shunts, two lamps being on two shunts and one lamp on the other. The shunts are of smaller wire than that of the main circuit, but they do not interfere with the main current, which passes through the carbons—in fact the shunts reduce the total resistance of the circuit. The lamps burn for four and a half hours, but it is intended to introduce a double set of carbons, which will of course duplicate this time.

Mr. Brockie has introduced quite a new principle into electric lighting, and certainly, to judge from the effect at Cannon Street, his success is unqualified. It remains to be seen how far this success is repeated at the General Post Office, at Victoria Street, Manchester, at Prince's Dock, Liverpool, and in the town of Liverpool itself. We certainly would like to see a good west-end street, say Piccadilly, Regent Street, or the Haymarket, lit up by this system.

Another system, not yet extensively employed, is Joel's

improved incandescent electric lamp. In the latter part of 1878 considerable interest was excited in both scientific and commercial circles by the announcement that M. Werdermann had succeeded in the so-called division of the electric light by an invention based on the incandescent principle. His system was exhibited on an experimental scale only for some time, and then suddenly disappeared from public notice.

This incandescent principle has recently been revived, with many and ingenious improvements in the mechanism of the lamp, by Mr. Joel. An illustration of the hanging lamp is shown in Fig. 4. The light is reproduced, as was the case in M. Werdermann's system, by the heating to incandescence of the end of a small rod or pencil of carbon forming one electrode, which protrudes through a pair of contact jaws and abuts upon a fixed cylinder of copper forming the other electrode. The carbon pencil consumes at the rate of $2\frac{1}{2}$ to 3 inches per hour for lights of 100 candle-power and upwards, and is fed forward according to the consumption. The length of carbon in circuit between the contact jaws and the fixed electrode is about three-quarters of an inch, and this, by the passage of the

¹ Continued from p. 33.